Defense Information Infrastructure (DII)
Common Operating Environment (COE)

Developer Documentation Requirements

Version 1.0

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Joint Interoperability and Engineering Organization
Defense Information Agency

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Preface

This Defense Information Infrastructure (DII) Common Operating Environment (COE) developer documentation requirements presented herein will establish the requirements for the types, content, and format of all documentation required by contract to be submitted with the delivery of DII COE software. This document is to be used as guidance for the documentation requirements for all DII COE software developers. Any and all elements of this document are subject to change (without formal notification) due to the evolutionary nature of the DII COE documentation requirements and the iterative feedback process in place for users, owners, and developers. However, it is the Defense Information Systems Agency's (DISA) intent that as documentation requirements change every effort will be made to communicate those changes to the technical user community.

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1. Introduction

This section provides the purpose, scope, implementation, vision, strategy, and organization of this DII COE Developer Documentation Requirements document.

1.1 Purpose

This document will establish the requirements for the types, content, and format of all documentation required by contract to be submitted with the delivery of DII COE software. The documentation requirements were derived, in part, from MIL-STD-498 *Software Development and Documentation*, dated 5 December 1994, and customized for COE documentation. It is the purpose of this document to define a set of requirements for DII COE documentation applicable to all DII COE developers that will achieve useful, well-organized, and usable DII COE documents. It is also intended to result in documentation that is consistent in the location, content, and presentation of information regardless of the document's origin.

The primary objectives of this document are to:

- Establish the software documentation requirements that apply to all COE software segment developers.
- Provide the basic content requirements for each type of DII COE software support document.
- Standardize the format (look and feel) of all DII COE documentation.

1.2 Scope

This document provides the overall requirements for producing and maintaining DII COE documentation. Specifically, the DII COE baseline requirements for software documentation are specified to identify, unify, and standardize all DII COE developer documents. These requirements are applicable to Department of Defense (DoD) and developer organizations involved in the development and maintenance of DoD mission and systems applications where DII COE documentation requirements must be met. These requirements include the representative environment of the current DII, including the kernel, tools, and Application Program Interfaces (API).

1.3 Implementation

All software, whether included in the Kernel or segment form, delivered for inclusion into DII COE Version 3.2 or subsequent releases, must adhere to the requirements in this document in its entirety.

1.4 Vision

The vision for DII COE documentation is to establish a fully standardized technical documentation capability which significantly facilitates both documentation development and developer productivity while providing DII COE document recipients a consistent quality product. The requirements specified in this document support DII COE goals and objectives and will facilitate DISA's Configuration Management (CM) process. The standardization of DII COE documentation will establish a common file format for all documentation which will facilitate shared access, review, update, and release of DII COE information across a variety of DoD organizations.

1.5 DII COE Documentation Strategy

The DII provides all DoD elements with services to meet the information processing and communications needs of DoD users worldwide. The integrating mechanism of the DII is the COE. The DII COE provides a set of integrated services that can be tailored to support the diverse needs of COE developers, DoD system developers, DoD mission application developers, and operational system sites. Since the COE exists in multiple configurations, COE documentation is maintained at the lowest configured level to allow documentation users the ability to obtain the COE documentation they need. This strategy provides documentation which can be customized to match a particular COE configuration.

Part of the DII COE strategy also provides developers using the DII COE with a set of developer-oriented documentation to support each released COE operating system platform. These documents currently consist of a DII COE Programmer's Manual, a Programmer's Reference Manual, a Consolidated Software Version Description Document, a Consolidated Installation Guide, and a Consolidated System Administrator's Manual. DII COE developer-oriented documentation relies heavily upon documentation supplied by DII COE contributors which are then compiled and formatted into consolidated documents.

1.6 Document Organization

This document is organized into the following 3 sections:

- **Section 1 - Introduction.** Provides the purpose, scope, implementation, vision, and strategy for documentation requirements.
- **Section 2 - DII COE Documentation Requirements.** Specifies the DII COE documentation delivery requirements, and identifies and describes various types of software documentation.
- **Section 3 - DII COE Document Format Requirements.** Establishes the requirements for a standard document format (layout) and provides guidelines for using the DII COE Document Templates.

The following Appendices are included in this document:

- Appendix A: List of Acronyms
- Appendix B: Software Version Description (SVD) sample outline
- Appendix C: Installation Procedures (IP) sample outline
- Appendix D: Software Product Specification (SPS) sample outline
- Appendix E: Database Design Document (DBDD) sample outline
- Appendix F: System Administrator's Manual (SAM) sample outline
- Appendix G: User's Manual (UM) sample outline
- Appendix H: Programmers Manual (PM) sample outline
- Appendix I: Application Program Interface Reference Manual (APIRM) sample outline
- Appendix J: Software Test Plan (STP) sample outline
- Appendix K: Software Test Description (STD) sample outline
- Appendix L: Software Test Report (STR) sample outline.

1.7 References

The following documents are referenced in this document:

MIL-STD-498, Military Standard *Software Development and Documentation*, dated 5 December 1994.

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2. DII COE Documentation Requirements

The primary objectives of documentation standardization are to: (1) identify standardized outlines and content guidelines for specific developer documentation and (2) facilitate the adoption of a standard word processing format for all DII COE documentation.

Standardizing DII COE documentation eliminates many problems experienced by document managers and end-users, provides consistency regarding the identification, appearance, and content of documents, and supports efficient document receipt and consolidation. All DII COE developer documentation shall comply with the format requirements specified in Section 3 and shall be submitted using the designated word processing format. As new capabilities become available to the DoD community, they will be considered for potential adoption as the new standard word processing format.

2.1 Documentation Delivery Requirements

To facilitate a greater degree of integration among various DII COE documents, WordPerfect (WP) 6.1 has been designated as the standard word processor format for all DII COE developer documentation. The adoption of a common format for developer documentation requires that all DII COE documents be delivered using WordPerfect 6.1. Exceptions to the following requirements must be approved by the DII COE Chief Engineer and coordinated with CM.

2.1.1 Delivery Requirements

1. Software deliveries must be accompanied by the associated documentation required by contract.

2. The developer shall provide two (2) camera-ready, unbound hard copies of the complete set of required documentation.

3. The developer shall provide, at a minimum, one (1) electronic copy, in WordPerfect 6.1 file format, of each document. Refer to paragraph 2.1.2 for additional electronic copy requirements.

4. All hard copy documents shall be a printout of the delivered electronic file(s) (i.e., printouts of the electronic copy in WordPerfect 6.1 or graphic file format). Refer to paragraph 2.1.2.

5. All documentation (including the delivery letter) shall identify the software product version number(s) and the corresponding COE version number(s).

2.1.2 Electronic Copy Requirements

1. One (1) electronic copy of all documents shall be in WP 6.1 format. An additional electronic copy of each document in Hypertext Markup Language (HTML) format is also required, unless otherwise indicated by contract.

2. It is essential that the delivered electronic copy be in native editor format to maintain the original layout of the documents submitted. Files converted to WP 6.1 shall be formatted to meet the document format requirements specified in Section 3 of this document.

3. All graphics, tables, and charts shall be embedded in the associated WordPerfect document file(s). Separate graphic files shall be in Graphics Interchange Format (.GIF) or Joint Photographics Expert Group (.JPEG) file format.

4. Multiple electronic files delivered on a diskette shall be organized using a directory structure as shown in Figure 2-1.

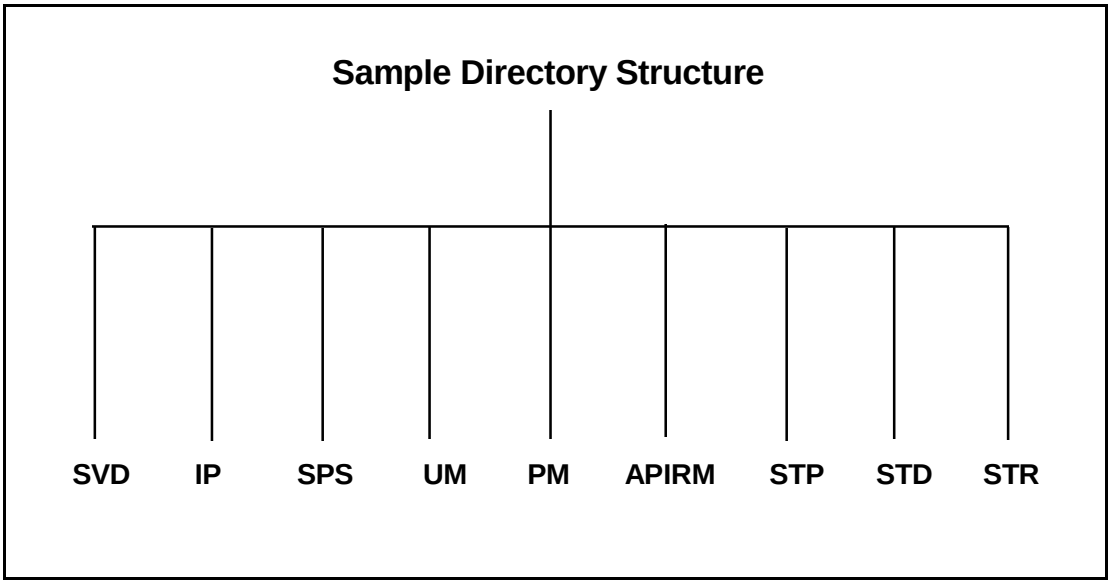

Figure 2-1. Sample Diskette Directory Structure

5. Electronic copy file names shall be descriptive (such as chapter1, section1, appendxa). All electronic copy files shall use standard file extensions in the file names (i.e., .WPD, .GIF, etc.).

6. Self-extracting files (.EXE) are permissible provided they comply with previously stated guidance.

7. Each diskette label shall contain, at a minimum, the document title, document version number, COE platform(s), material date, file name, file format (word processor/graphic format), and compression utility used (if applicable). Special instructions, such as file decompression instructions, needed to use the files shall be included on the disk in a *readme* text file (README.TXT) in the root directory.

2.2 Required Software Support Documents

2.2.1 Required Documentation

The following list of documents have been identified by DISA/OSF CM as necessary to support DII COE software deliveries. Therefore, within the scope of contractual obligations, the following documents are required.

1. **Software Version Description (SVD)**
2. **Installation Procedures (IP)**
3. **Software Product Specification (SPS)**
4. **Database Design Document (DBDD)**
5. **System Administrator's Manual (SAM)**
6. **User's Manual (UM)**
7. **Programmers Manual (PM)**
8. **Application Program Interface Reference Manual (APIRM)**
9. **Software Test Plan (STP)**
10. **Software Test Description (STD)**
11. **Software Test Report (STR)**

All segment deliveries shall be accompanied by the software support documentation listed above, unless a waiver has been approved by DISA (refer to Section 2.2.2). A short description for each required document is provided in Section 2.3. Annotated outlines for each document are provided as appendices to this document. A set of corresponding WP 6.1 document templates, in DII COE document format (refer to Section 3), are available from the DII COE CM department. The content of the outlines and templates for these documents are based upon MIL-STD-498, where applicable.

2.2.2 Waivers to Documentation

DISA's Engineering organization performs a Critical Design Review (CDR) of all software submitted for inclusion in the DII COE. The CDR board will grant approval before a developer can submit a software package to CM. Waivers to the requirements specified in this document may be submitted to the DII COE Chief Engineer in one of two ways: at the CDR (first time software submission) or by formal written request (subsequent software delivery). The developer shall submit a written request for a waiver to the DII COE Chief Engineer for each document required but not provided. Each request shall include a short explanation of the reason for the

waiver. The Software Version Description shall identify any and all approved waivers for the software and documentation.

2.3 Document Descriptions

2.3.1 Software Version Description (SVD)

The SVD identifies and describes in detail the hardware, software, and the documentation baseline of the application, to include a list of known problems. The SVD shall identify the exact product version number of the software and the COE release version number. It shall briefly state the purpose and describe the functionality provided by the software. The SVD description shall provide a synopsis of:

- the software name,
- product version number (release),
- DII COE version number,
- reason for the software change (i.e., why developer is incrementing the COE version number),
- designation of Government Off-the-Shelf (GOTS) or Commercial Off-the-Shelf (COTS) with licensing information,
- a list of applicable platforms and operating systems,
- RAM and hard disk space required by the segment,
- information with respect to prerequisites and processor compatibility,
- operating system and version compatibility,
- list of problems that have been fixed,
- list of known anomalies (problems/bugs) with recommended work-around when available.

The SVD for GOTS software is equivalent to the Software Release Notice (SRN) used in commercial releases. A sample outline for the SVD is provided in Appendix B.

2.3.2 Installation Procedures (IP)

The IP document provides step-by-step procedures for installing the system or segment, including hardware and software requirements. It covers the media, loading, verification and initialization of the software package (COE segment) or system. The IP should provide a checklist for the verification of the installation after initialization has occurred, including the files created (or exploded) as well as the data, files or database names that the installation will create or generate. A sample outline for the IP is provided in Appendix C.

2.3.3 Software Product Specification (SPS)

The SPS document specifies the executable software, source files, and software support information, including software design and build information, by inclusion or reference. It provides procedures for compiling, building, and modifying copies of the subject software. It

identifies the requirements satisfied by the software and provides requirements traceability. The SPS establishes the criterion for valid duplication of software. It also describes the computer resource utilization requirements for the subject software. A sample outline for the SPS is provided in Appendix D.

2.3.4 Database Design Document (DBDD)

The DBDD document contains a description of the database design, data organization, creation parameters, internal file relationships, record and file descriptions, and other details relating to the database design. It provides the essential information for database administrators and analysts to install and verify the generation of the database and to manage the database, the data, and the records. A sample outline for the DBDD is provided in Appendix E.

2.3.5 System Administrator's Manual (SAM)

The SAM document provides specific guidance for System Administrators to support COE system and software installation and maintenance. It covers the administrative tasks and procedures required to maintain system integrity and perform system maintenance and operation. These may include the entry of new user identification, the attributes of security, the establishment of links between the systems and other applications, or the activation or de-activation of telecommunication tasks or lines, etc. A sample outline for the SAM is provided in Appendix F.

2.3.6 User's Manual (UM)

The UM document provides specific detailed information and guidance on the use of the functionality provided to users of the system and software. It contains guidance on the operations of the system and software. It describes the behavior of the system and software, from the users point of view, including the actions that can be taken by users and the results of those actions. This may include menus and displays, messages and warnings, commands and controls, and other information a user may need to know. A sample outline for the UM is provided in Appendix G.

2.3.7 Programmers Manual (PM)

The PM document provides specific guidance to application and segment developers. It describes the development environment, identifies constraints, and provides details to assist developers in writing, building, and running applications. The PM provides procedures, references, and other information developers may need to know. A sample outline for the PM is provided in Appendix H.

2.3.8 Application Program Interface (API) Reference Manual (APIRM)

The APIRM document describes the public or COE approved APIs provided by the subject software. It provides details about each approved API, including the purpose, the functionality, the syntax, and the related inputs and outputs. The APIRM also provides information on the use

of each API (by example or description) to assist application developers in determining when and how to use each API. A sample outline for the APIRM is provided in Appendix I.

2.3.9 Software Test Plan (STP)

The STP document describes the types of tests and provides traceability to the software requirements they satisfy. The STP identifies the test locations, describes the test environment, and provides details concerning resources required for testing. It contains schedules for the planned tests. A sample outline for the STP is provided in Appendix J.

2.3.10 Software Test Description (STD)

The STD document describes the test cases and acceptance criteria that will be used to test the software. It describes the test methods, tools, scenarios, and the pass/fail criteria for assessing the results of the testing. The STD shall provide all essential information relating to each test so that an independent test can duplicate the test results or verify the results obtained. A sample outline for the STD is provided in Appendix K.

2.3.11 Software Test Report (STR)

The STR document provides a technical report with supporting documentation (package of materials) required to evaluate the results of the software tests described in the STD. The STR documents the results of all tests run against the software, identifies problems encountered during testing, and recommends solution to those problems. It incorporates the test log as a record of the events for each test. A sample outline for the STR is provided in Appendix L.

3. DII COE Documentation Format Requirements

The purpose of this section is to establish a standardized document format for all DII COE developer documentation. Experience with manipulating electronic files also indicates the need to standardize document editors and file format through the use of a common word processor and templates to achieve a consistent appearance (such as type and size of text font, paragraph headings, and list items). Standardizing DII COE documentation will also minimize many of the problems end-users often experience opening, viewing, printing, and reformatting baselined document electronic files. The documentation format requirements are provided as guidance to all DII COE document providers. A set of corresponding templates are available from DII COE CM that incorporate the format described in this section.

3.1 Document Format Requirements

The following requirements describe the standard document format, or layout, of DII COE developer documentation based on the designated word processor. These requirements and guidelines intentionally use as much of the default settings of the word processor as possible to reduce the level of effort required to format files. These requirements are subject to change, and are not intended to be a definitive style guide. They will provide flexibility while resulting in documents that have a common "look and feel" through the use of the corresponding WordPerfect templates (refer to Sections 3.2 and 3.3). The following requirements apply to all DII COE documentation submitted to DII COE CM. Exceptions to the following requirements must be approved by the DII COE Chief Engineer and coordinated with CM.

NOTE: Where it does not conflict with the requirements specified in this document, it is recommended that the Government Printing Office (GPO) Style Guide be used as the style guide reference.

The following requirements and guidelines are keyed to the WP 6.1 menu items, which can be accessed from the WP main menus, the tool bar, or the power bar. The format described corresponds to styles and codes defined in the WordPerfect templates provided. WordPerfect Main Menu selections listed below are <u>underlined</u>. First level Submenu items (under main menus) are *italicized*. Items which a user must either select or enter are in **bold**. To view the formatting codes in a document, select <u>View</u>, and *Reveal Codes*.

NOTE: The basic format described in the following paragraphs addresses formatting documents for double-sided reproduction (including blank pages). Deviations from the standard to accommodate "very small" (12 pages or less) and "very large" (greater than 75 pages) documents are included in these requirements under the applicable format topics. "Very small" documents are formatted for single-sided reproduction. Directions are also included to accommodate a section numbering page scheme for "very large" documents where it is necessary to keep sections and/or appendices in separate files.

3.1.1 Page Format

Refer to the WP Format menu for the following items.

1. *Font*: The Initial/Base Font for all text shall be **Times New Roman**, **Normal**, and Font Size shall be **12** point.

2. *Justification*: **Left** justification shall be applied to all document text.

3. *Margins*: Use the following settings as the default: **1**" for left and right margins, **0.6**" for the top margin, and **0.5**" for the bottom margin.

4. *Page*: Widow/Orphan control shall be **On** for all documents (see Keep Text Together).

NOTE: Edits made to the format of WordPerfect documents (such as tab settings and margin changes) apply from the point at which the change is made (where the cursor is) forward in the document. Edits made to the format of selected (highlighted) text affect the selected text (and the page(s) the text falls on). Therefore, whenever the standard format is changed in a document, it must be returned to the standard format, as required.

3.1.2 Page Numbering Format and Pagination

Refer to the WP Format, *Page* menu for the following items.

1. *Page* Numbering Position shall be **Alternating Bottom** to allow for double-sided reproduction. The *Font* for page numbers shall be **Times New Roman Normal** and **12** point. *Page* Numbering for the Table of Contents (TOC) shall be **Lowercase Roman** numerals and start in page **i**. Page numbers for the body of the document shall use **Numbers** (see item 6) and start on page **1**.

2. Pagination shall support double-sided reproduction, including any blank pages.

3. Blank pages (backup pages) shall be identified with the sentence "**This page intentionally left blank.**" on all blank pages except the page after the title page (see Section 3.1.3). This sentence shall appear centered in the middle of the page. Refer to the blank page in the Table of Contents section of the template for an example of a blank page format.

4. Sections shall begin on a new **odd** page (face page) and use blank **even** pages (backup pages) where needed to support double sided reproduction.

5. For reasons stated previously, documents that are small (12 pages or less) do not need to be formatted for double-sided reproduction (i.e., blank pages are not required and Sections do not have to begin on a new odd page).

6. Documents shall have a sequential page numbering scheme (1, 2, 3 etc.). However, large documents (greater than 75 pages) may be section numbered. To number pages by sections perform the following actions:

   - Place the cursor at the top of the first page of your section (before the heading codes).

   - From the *Page* Numbering window, set the starting page number **Value** to **1**.

   - In the *Page* Numbering **Options** window, type the section number and a hyphen before the page number code (example; **1-Pg#**, **A-pg#**).

7. Pagination for Appendices shall be a continuation of the body of the document. However, where it is needed in large documents or large appendices (such as listings) a section numbering scheme, described above, may be applied.

8. Whenever possible, do not refer to page numbers when making cross-references within your document. References to page numbers may not be valid in a hard copy of an electronic document file.

3.1.3 Title Page Format

A representative title page is included in the template(s). The title page shall identify, at a minimum, the type of DII COE document (refer to Section 2.2.1), the name and version of the software/segment, the associated COE platform(s) (as applicable), a document version (as applicable), and a document date.

The title page is not paginated and shall be followed by a blank backup page. This blank page is also not paginated, has no headers or footers, and has no text indicating it is a blank page. The blank page is not required for small documents formatted for single-sided reproduction.

3.1.4 Format for Headings

Refer to the WP Format menu, *Styles* list for the following items.

1. All documents shall be formatted using the heading styles provided in the DII COE document templates (see Format menu, *Styles* listing). Paragraph headings styles are named **head1**, **head2**, **head3**, **head4**, and **head5**. These styles may be applied from the *Styles* icon on the Power Bar.

WARNING: The headings styles described below are defined in a WordPerfect Outline. The WP code for this Outline appears on the first page of the template after the InitialStyle code. If this Outline code is deleted or removed, the corresponding heading styles will also be deleted.

2. Heading shall use a legal numbering scheme (1.1.1). Numbered headings in text shall not be used.

3. Section headings (**head1**) shall be Initial Capitals, 16 point bold, and centered at the top of the page. This format applies to Appendix headings also. The default **Heading 1** style from the template may be applied to the headings for Appendices.

4. Section headings for small documents (12 pages or less) should not be centered at the top of the page. Section heading for small documents shall be left adjusted to the margin and sections do not need to begin on a new page. To change the justification of the **head1** style for small documents, perform the following actions.

   - From the Format menu, select *Styles*, **head1**, and Edit or using the mouse, double-click on the **head1** Style code in Reveal Codes to access the styles editor pop-up window.
   - Delete the center Justification code.
   - Replace the three spaces after the period with a left indent (Hd Left Ind) (see Format, *Paragraph* and Indent or use the F7 key) and select OK.

5. Second level headings (**head2**) shall be Initial Capitals, 14 point bold, and left adjusted to the margin.

6. Third level, fourth level, and fifth level headings (**head3 - head5**) shall be Initial Capitals, 12 point bold, and left adjusted to the margin.

7. In large documents where sections of a document are maintained in separate files, the section numbers must be set for each file. To set or change a section number or a paragraph number, perform the following actions.

   - Place the cursor in the heading text, (i.e., inside the heading style codes).
   - From the Tools menu, select *Outline*. From the *Outline* feature bar, select Options and **Set Number**.

C Type in the new paragraph number. The number must correspond to the heading level where the cursor is, for example, type **2** if the cursor is in a **head1** or type **2.1.3** if the cursor is in a **head3.**

3.1.5 Header and Footer Format

Refer to the WP Format menu, *Header/Footer* for the following items.

1. The template contains a format for headers and footers which shall be tailored for each document. The text for headers and footers shall be **Times New Roman**, **Italic**, and **10** point.

2. The footer shall identify the document Date (required) and whether it is a Draft or a Final version (optional).

3. The header should include a document number (optional, but recommended). A document number provides accurate identification of documents on diskette. The document number shall be in the following format, as applicable:

   DII.XXX.YYY.ZZZ.AAA where

   XXX is the DII COE release version or DII segment version your document applies to,

   YYY indicates either Draft or Final (coincides with the footer),

   ZZZ is the DII COE Platform your document applies to, such as HP907 (for HP 9.07) or NT40 (for Windows NT 4.0),

   AAA identifies the type of document, such as SVD for Software Version Description. This may include any user suffix such as -1.

   Example: *DII.3003.Draft.HP907.SVD*

3.1.6 Format for Figures, Tables, Notes, and Warnings

The styles for figure, table, and text boxes (see Graphics *Styles* menu) have been edited for the templates. WordPerfect places all figures in a graphics box. Refer to the buttons on the graphics box Feature Bar (or see the Graphics *Styles* box editor) and the associated styles pop-up windows for setting the graphic box attributes described below.

1. Figures shall be anchored to the paragraph (see *Position*, Box Placement, **Put Box in Current Paragraph**). Figures shall be centered between the margins (see *Position*, **Center of Paragraph**) with **0** horizontal and **0** vertical offset. Figure boxes shall have text wrap around the box (see *Wrap*, **Neither Side**) and have a

single line border (see *Border/Fill)*. Figure titles shall be centered **below** the figure and outside the border (see *Caption*, Caption Position). Refer to item 4 below.

2. Tables shall be centered between the margins (with the table highlighted, from the Table menu select *Format*, Table Position and **Center**). Tables should have a single line table grid (see Table, *Expert* or *Lines/Fill*). Table titles shall be centered between the margins **above** the table.

3. Notes and Warnings shall be placed inside Text Boxes. Text boxes shall have the box *Size* set to **Full** for the width (full justification) and **Size to Content** for the length. Text boxes shall have a single or button border (see *Border/Fill)* and have text wrap around the box (see *Wrap*, **Neither Side**).

NOTE: The styles for figure and table boxes (**Figure Box** and **Table Box**) use a WP counter feature for a figure and table numbering scheme that is automatically generated in the caption for each box. The numbering scheme in the **diicoet1.wpt** template has been set up for section numbering figure and table boxes using 2 levels of numbers (see Insert, *Other*, Counter, **.Figure Box** and **.Table Box**). The **diicoet2.wpt** template uses the default settings for figure and table styles, which is a single level counter. WP also has features for generating lists (used in the template TOC) created from the captions for these same boxes (see Tools, *List*). These features allow template users to place their figure and table titles in the associated captions. The titles do not need to be numbered and do not need to be Marked for the TOC. If the boxes are moved, deleted, or added within the document, the numbers will automatically update based on the new sequence of boxes.

4. Figures appearing in documents may be formatted (see item 1 above) using the Figure Box Style in the template (i.e., apply the Figure Style to figures that will appear in the TOC). Titles for figures may then be placed in Figure Box *Caption*s. A figure number in the caption (FigBoxNum) will automatically be generated each time a figure caption is created. It includes the word “Figure” preceding the number.

5. Table titles may be formatted (see item 2 above) using the Table Box Style in the template. Table boxes shall have text wrap around the box (see *Wrap*, **Neither Side**), have no border/fill or spacing outside the border, and have the box *Size* set to **full** for the width and **0** for the height. Titles for tables may then be put into Table Box *Caption*s. Table *Caption*s shall be centered above the box and inside the border. A table number in the caption (TblBoxNum) will automatically be generated each time a table caption is created. It includes the word “Table” preceding the number.

3.1.7 Figure and Table Titles and Numbering

1. Figure and table titles shall be **Times New Roman Normal** and **12** point. The titles shall have a period and two spaces after the number and before the title text (example: Figure 1. Your Title).

2. Whenever possible, a simple figure and table numbering scheme shall be used (examples: Figure 1, Table 2). This requirement also applies to small documents (12 pages or less). A template has been provided with this format (see the diicoet2.wpt template).

3. Where necessary, especially in large documents (documents with greater than 75 pages), figures and tables shall be numbered by section. To number figures and tables by section (example: Figure 1-1. Your Title) using the diicoet1.wpt template provided, perform the following actions.

   - Place the cursor at the top of the first page of each section (before the heading codes).

   - From the Insert menu select *Other* and Counter, then select either the **.figure box** or **.table box**, and

   - Change the **Value** of **Level 1** to match the section number and set the **Value** of **Level 2** to **1**.

3.1.8 List Items and Indentation

1. The default tab setting for WP 6.1 (every .5" (inches) relative to the margin) shall be used as the standard for the body text of all documents. Indentation of all list items in documents shall use increments of .5". This requirement does not apply to the TOC (Table of Contents).

2. Bulleted and numbered list items shall be generated using the *Bullets & Numbers* icon on the Power Bar (also refer to the Insert menu). First level list items in text shall either be left adjusted to the margin or indented .5" from the left margin. Subordinate items shall be left indented in increments of .5" (inches) relative to the margin.

3. *Bullets & Numbers* list items may be indented (globally) in a document by inserting a Tab into the style codes of a particular list from the Bullets & Numbers Styles Editor window (see **Insert** menu). Insert tab(s) before any of the existing codes in the window. This action affects all the corresponding list items in the document.

3.1.9 Table of Content Format

1. All documents shall have a Table of Contents (TOC). The TOC shall include a lists of figures and a list of tables, if applicable.

2. TOC section, paragraph, appendix, table, and figure numbers should be left adjusted to the margin. The corresponding text should be indented to show the subordination of headings.

3. The template TOC has had all codes removed from the TOC Styles. After TOC generation, the TOC will need to be formatted and tabs inserted for indentation. Users may edit the TOC definition, or delete and replace (copy and paste) the current TOC definition (i.e., the Def Mark code).

4. The template TOC has defined a List of Figures and a List of Tables that will capture the **.Figure Box** and **.Table Box** captions, respectively. Separate items may be marked for inclusion in these lists, as needed. Template users may use this feature, edit the definition for these lists, or mark and define separate lists for figures and tables.

5. A Tab Setting has been included in the template on the Table of Contents page (after the title) to unify the appearance and assist in formatting TOCs.

3.2 Guidelines for Using Standard Document Templates

The word processing settings for the document format described above coincide with settings in the WP templates. There are two blank templates, one for numbering figures and tables by section (diicoet1.wpt), and a second template for a simple, sequential figure and table numbering scheme (diicoet2.wpt). Templates have also been created, based on the diicoet2.wpt template, for each DII COE required software document (refer to Section 3.3). Both the document format and corresponding templates are intended to be maintained and tailored as a result of joint cooperation and input from all interested parties. Any comments, questions, or concerns should be forwarded through the DISA contact listed in Section 1 . Instructions for implementing and using the DII COE document templates are described below.

3.2.1 Applying the Template

1. Copy the template files to the default WordPerfect template directory. This directory varies depending on the user's computer and system configuration and the WP installation.

2. Edit the (.wpt) template file as needed. For example, a user may edit the title page or add a cover page and save as a new template. To edit a template, select *New* from the File menu, select a template from the New Document pop-up window, select **Options** and then select **Edit Template**.

3. Create a new document based on a DII COE template. From the File menu open a *New* template document and select (double-click the mouse on) the DII COE template you wish to use. You now have a new, unnamed document.

3.2.2 Using the Template

Specific instructions for using the templates are included in the Section 3.1 requirements for the standard document format.

1. Use the templates to create new documents and format old ones. If you have an existing document you wish to format, you may:

   - Insert the file into a new blank document. The styles and formatting from the inserted file may affect the styles and format of the document. In cases where a style has the same name, the template style may be overwritten. The resulting document will need to be formatted per the standard.

   - Cut or copy and paste information from an existing file into your new document. This method is recommended. It allows users greater control over the formatting process, since there are several paste options (see Edit, *Paste Special*). Imported figures and tables may need to be formatted for style.

2. Edit the header for a document number (refer to Section 3.1.5). This will allow document recipients to identify and correlate document hardcopy and electronic files.

3. Edit the footer as required (refer to Section 3.1.5) with the document date.

4. If necessary, you may open another document using the template and copy and paste any WordPerfect codes you need, such as margin codes or tab settings.

3.2.3 Creating an Index

WP has an Indexing feature (see Tools, *Index*). Creating an Index for a document is similar to creating a TOC (i.e., **Mark** items for inclusion, and **Define** the Index (style) at the point where the Index will appear). To mark text for inclusion in an Index, perform the following actions (refer to the buttons on the Index Feature Bar):

1. Search (see Edit, *Find and Replace*) for occurrences of a subject in your document.

2. In the *Index* Feature Bar **Heading** window, enter (or scroll down to find) the Index heading. The Index heading may be pre-filled with the text entered into the

Find area of the Find and Replace Text pop-up window after executing a search. In the *Index* Feature Bar Subheading window, enter the Index subheading, if needed.

3. Select the text you wish to **Mark** for inclusion under the heading and subheading appearing in the feature bar. Then select (click on) the **Mark** button from the *Index* Feature Bar.

4. Continue searching for the heading and/or subheading text and marking occurrences of items you wish to appear in an Index.

5. Select the **Define** button from the *Index* Feature Bar. Remove (deselect) the **X** from the Use Dash To Show Consecutive Pages option and select OK.

6. When the **Generate** option is selected, from the Tools menu or from a related feature bar, WP generates all defined TOCs, Lists, Indexes, and Cross-References at the same time.

3.2.4 Creating a Cross-Reference

WP has a feature for automatically generating cross-references to a footnote, paragraphs, captions, etc (see Tools, *Cross-Reference*). Creating a cross-references in a document is similar to the procedure described above for creating an index. To create a reference, select the type of **Reference** (e.g., Caption Number, Paragraph/Outline, etc.), enter or select a **Target** name, place the cursor directly after the target item and select **Mark Target**, then move the cursor to the place where you want to create a reference and select **Mark Reference**.

3.3 Guidelines for Using Pre-Filled Document Templates

A template is available, based on the diicoet2.wpt blank template, for each DII COE required software support document (refer to Section 2.2). Document developers may use these templates to create their DII COE software documentation. These document templates are pre-filled with the corresponding outlines that appear in Appendix B through L. The document outlines in the appendices have had the heading codes removed for appearance, however, the text is the same.

Section 3.2.1 explains how to create a new document using any of the templates provided. Each pre-filled document template has instructions, in plain text format, for preparing the document. Users may edit each new document as needed and replace the instructions with the appropriate information. Users may also edit the template file itself and remove the instructions, or cut the instructions out of the text and paste them in as comments.

Appendix A: List of Acronyms

API	Application Program Interface
APIRM	Application Program Interface Reference Manual
CDR	Critical Design Review
CM	Configuration management
COE	Common Operating Environment
COTS	Commercial Off-the-Shelf
DBDD	Database Design Document
DCE	Distributed Computing Environment
DII	Defense Information Infrastructure
DISA	Defense Information Systems Agency
DoD	Department of Defense
GIF	Graphics Interchange Format
GOTS	Government Off-the-Shelf
HTML	Hypertext Markup Language
IDD	Interface Design Description
IP	Installation Procedures
JPEG	Joint Photographics Expert Group
MIL-STD	Military Standard
PM	Programmers Manual
POC	Point of Contact
SAM	System Administrator's Manual
SDD	Software Design Description
SPS	Software Product Specification
SRN	Software Release Notice
STD	Software Test Description
STP	Software Test Plan
STR	Software Test Report
SVD	Software Version Description
TOC	Table of Contents
UM	User's Manual

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Appendix B: Software Version Description (SVD) Sample Outline

This SVD document outline contains Table of Content order, descriptions, and preparation instructions. A corresponding WP 6.1 template, **diisvd.wpt**, is available from DII COE CM for document developers to use.

1. Scope

1.1 Identification

This paragraph shall contain a full identification of the system and the software. It must provide the name(s), title(s), abbreviation(s), version number(s), and the release number(s). Identification must include:

Segment Name: Common name or Product name identification. Identify if this is a GOTS, COTS, Freeware or Shareware product.

Version Number(s): Provide product version number and COE version number, as applicable.

Platform(s): Specific hardware and operating system use or applicability.

1.2 System Overview

This paragraph shall provide a brief description of the general nature, purpose, and function of the system and software. Include references to other sources of information. For example:

Purpose: Purpose of the segment (i.e., what functionality and features are provided).

Usage: When and how is the segment to be used.

References: Provide reference information regarding product details. List publications and other sources of technical support, training, and on-line support (e.g., Internet and Web Sites), when available. Provide sources for publications, point of contact (POC), agents or service/support centers, as applicable.

1.3 Product Information

Provide the following information:

Product Qualification	Provide product qualification and date the qualification was issued above. State the type of acceptance, including testing, certification, conformance assessment or interoperability applicable to the product type.
Product Restrictions:	Identify the licenses in effect or required for use and the constraints imposed. List all applicable licensing, patent, trademark and/or copyright restrictions for the described segment. Also provide restrictions for Shareware and Freeware products, when applicable.
Product Dependencies:	Identify all dependencies for the product segment. Provide implementation constraints and limitations on system configuration or other information required for the implementation and operation of the software or system.

2. Referenced Documents

Provide a list of documents referenced in this document. List each document by document number, title, version/revision, and date. Identify the source for all documents not available through the Government.

3. Version Description

3.1 Inventory of materials released

List all physical media (i.e., tapes, diskettes, CDs, listings, and all documentation) that make up the software version being released. Provide for each list item identifying numbers, titles, abbreviations, dates, version numbers, release numbers, and other information, as applicable. Include applicable security, privacy, trademark and licensing considerations for these items, with safeguards for handling the media.

NOTE: Also identify all documentation pertinent to the software/segment but not listed as part of the delivery.

3.2 Inventory of Software Contents

List by identify names and numbers, titles, abbreviations, dates, version numbers and release numbers, as applicable, all computer libraries and files that make up the software being released. Include any security and privacy concerns.

3.3 Changes Installed

This section does not apply to initial software releases. Provide a list of all changes, enhancements, and fixes incorporated into the software version since the previous version. Changes must be grouped and separated by change classes (Class 1/Class II), if applicable. Identify all known anomalies, problem reports, change proposals, and change notices associated with each change or fix. Identify the effects, if any, of each change on system operations and on interfaces with other hardware and software.

3.4 Waivers

Provide information regarding waivers associated with this system/software. List all approved waivers including documentation waivers. For COTS products also include waivers associated with product licensing and /or product distribution and use.

3.5 Adaptation Data

Identify or reference all unique-to-site data contained in the software version. For software versions after the first, describe changes made to the adaptation data.

3.6 Installation Instructions

Provide a reference to the Installation Procedures (IP) document which contains the applicable instructions. Identify the document number, title, version/revision, and date, as applicable. Identify the RAM and hard disk space required by the software/segment.

3.7 Possible Problems and Known Errors

Identify (list) any possible problems and all known errors with the software at the time of the release. Include any actions being taken to resolve the problems or errors. Provide instructions for recognizing, avoiding, correcting or handling (work-around) each problem or error.

4. Notes

Provide general information to assist in the understanding of this document. May include a list of acronyms and abbreviations, and a list of terms and definitions.

A. Appendices

Appendices may be used to provide additional information published separately for convenience in document maintenance. The appendices shall be referenced in the main body of the document, where applicable.

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Appendix C: Installation Procedures (IP) Sample Outline

This IP document outline contains Table of Content order, descriptions, and preparation instructions. A corresponding WP 6.1 template, **diicoeip.wpt**, is available from DII COE CM for document developers to use.

1. Scope

1.1 Identification

This paragraph shall contain a full identification of the system and the software. It must provide the name(s), title(s), abbreviation(s), version number(s), and the release number(s). Identification must include the operating system platform(s) to which this document applies.

1.2 System Overview

This paragraph shall provide a brief description of the general nature, purpose, and function of the system/software.

Provide references to additional information sources. Include documentation that may assist the user when problems are encountered. Identify each document by document number, title, version/revision, date, and source. Provide a point of contact to be used for reporting problems. Include facilities or organizations equipped to help in the event problems are encountered during installation. Identify organizations with mailing address, telephone number, fax number, and Web page or Internet address, as available.

2. Referenced Documents

Provide a list of documents referenced in this document. List each document by document number, title, version/revision, and date. Identify the source for all documents not available through the Government.

3. System Environment

Describe the system environment necessary to perform the installation of the software in this section. Include system and software configuration information, identify dependencies and compatibility issues, and provide any procedures that must be performed prior to installing the software.

3.1 System Requirements

3.1.1 Hardware Requirements

Identify all system hardware resources required to perform the software installation by name, number, type, size, etc. Provide the RAM and hard disk space required by the software/segment.

Provide other requirements for computers, memory, drives, and other devices or components, as applicable.

3.1.2 Operating System Requirements

Identify the operating system and related components required to perform the software installation by names, version numbers, and release numbers, as applicable.

3.1.3 Kernel Requirements

Identify the DII COE Kernel version required to perform the software installation by name, version number, and release number, as applicable.

3.2 System and Site Preparations

Describe the system and site preparations that need to be performed prior to installing the software. Provide procedures for setting up the hardware and software, as needed. Identify hardware/software dependencies and exceptions to configuration, as applicable.

3.2.1 System Configuration

List any software or hardware components that must be installed and configured prior to the installation of the software (e.g., Telecom, Distributed Computing Environment (DCE), etc.). This section may cover requirements for upgrading specific system software with version dependencies.

3.2.2 Operating System Preparation

Provide procedures or information, if any, needed to prepare the operating system. Provide specific system requirements prior to installation (e.g., security, system privileges).

3.2.3 Tape/Disk Preparation

Provide procedures or information needed to prepare the tape or disk drive and related media, as applicable. Identify the physical media containing the software. Describe the disk partitioning and library set-ups that may be required.

4. Installation Instructions

Provide the step by step procedure and instructions for installing, configuring, and initializing the system software or segment into the appropriate libraries using the COE approved guideline for segment installation and verification.

4.1 Media Booting Procedures

Provide instruction for booting the media containing the software, as needed, with specific options when required for the installation.

4.2 Installation Procedures

Provide the step by step procedures and for configuring and installing the software. Provide instructions on how to load or download the software or segment into specific libraries using the DII COE approved guidelines for segment installation and verification.

4.3 Installation of Upgrades

Provide the step by step procedures and instructions for upgrading already installed software with new versions or patches. Identify the loading or downloading sequence and options for the software or segment installation.

4.4 Installation Verification

Describe procedures or a method (such as a checklist) for determining if the software installation was successful. This section may also describe and provide instructions for any software verification routines or programs provided, if any.

4.5 Initializing the Software

Describe the steps to be performed at the completion of the software installation. Include the procedures required for the initialization of system and software program operations.

4.6 List of Changes and Enhancements

Provide a brief description of the changes, enhancements, and fixes (patches) incorporated into this version of the software. Reference the applicable SVD for a detailed list of the software changes.

4.7 Important Considerations

Provide any security, licensing, privacy, and/or safety precautions and instruction relevant to the software being installed. This section may also provide critical back-up and archiving instruction.

5. Notes

Provide general information to assist in the understanding of this document. May include a list of acronyms and abbreviations, and a list of terms and definitions.

A. Appendices

Appendices may be used to provide additional information published separately for convenience in document maintenance. The appendices shall be referenced in the main body of the document, where applicable.

Appendix D: Software Product Specification (SPS) Sample Outline

This SPS document outline contains Table of Content order, descriptions, and preparation instructions. A corresponding WP 6.1 template, **diisps.wpt**, is available from DII COE CM for document developers to use.

1. Scope

1.1 Identification

This paragraph shall contain a full identification of the system and software. It must provide the identifying number(s), title(s), abbreviation(s), version number(s), the release number(s), and the associated COE version number(s), as applicable. Identification must include the operating system platform(s) to which this document applies.

1.2 System Overview

This paragraph shall provide a brief description of the general nature, purpose, and functionality provided by the software.

2. Referenced Documents

Provide a list of documents referenced in this document. List each document by document number, title, version/revision, and date. Identify the source for all documents not available through the Government.

3. Requirements

Specify the contents of the delivered software. Describe all materials that comprise the subject software delivery by enclosure or reference to the electronic media.

3.1 Executable Software

Identify the executable software provided in the referenced or enclosed electronic media. Specify all executable files and any batch files, command files, data files, or other software files needed to install and operate the subject software on the target computer platform(s).

3.2 Source Files

Identify the source files for the software provided in the referenced or enclosed electronic media. Specify all source files including any batch files, command files, data files, or other software files needed to regenerate the executable software.

3.3 Packaging Requirements

Specify the requirements, if any, for packaging and making copies of the subject software.

4. Qualification Provisions

Identify the method(s) to be used to demonstrate that a reproduction of the subject software is a valid copy.

5. Software Support Information

5.1 "As Built" Software Design

Provide or reference the appendix or other document(s) that contain the "As Built" software design. The information shall be the same as that required in a Software Design Description (SDD), Interface Design Description (IDD), and Database Design Description (DBDD), as applicable, and described in MIL-STD 498. Information provided in the source code listings may be referenced.

5.2 Compilation/Build Procedures

Describe or reference an appendix that describes the procedures to be used to create the executable files from the source files and to prepare the executable files for loading onto firmware or other distribution media. Specify the compiler(s)/assembler(s) to be used, including version numbers; other hardware and software needed, including version numbers; any settings, options, or conventions to be used; and procedures for compiling/assembling, linking, and building the subject software and associated system/subsystem, including variations for different sites, configurations, version, etc. Reference other documents that contain the required information, as needed.

5.3 Modification Procedures

Describe procedures that must be followed to modify the subject software. Include or reference information on the following, as applicable:

a. Support facilities, equipment, software, and procedures for their use
b. Database/data files used by the subject software and procedures for using and modifying them
c. Design, coding, and other conventions to be followed
d. Compilation/build procedures if different form those above
e. Integration and testing procedures to be followed

5.3 Computer Hardware Resource Allocation

Describe the subject software's measured utilization of computer resources (such as processor capacity, memory capacity, communications/network equipment capacity, etc.). Include all computer hardware resources utilized by the software and system-level resources affecting the software, or in the software development plan. For each computer hardware resource provide or reference the following information, as applicable:

a. Traceability to the software requirements or system-level resource allocations being satisfied (here or in Section 6)
b. Assumptions and conditions on which the utilization data are based (such as typical or worst-case)
c. Any special considerations affecting the utilization (such as impacts of OS or implementation)
d. Units of measure used (such as percentages, cycles per second, bytes)
e. Software level(s) at which the estimates or measures have been made (such as software unit or executable program)

6. Requirements Traceability

Provide traceability from each software source file to the software unit it implements. Provide traceability from each software unit to the source files that implement it. Provide traceability from each software unit to the system or software requirements it addresses. Provide traceability from each system or software requirement to the software unit that addresses it.

7. Notes

Provide general information to assist in the understanding of this document. May include a list of acronyms and abbreviations, and a list of terms and definitions.

A. Appendices

Appendices may be used to provide additional information published separately for convenience in document maintenance. The appendices shall be referenced in the main body of the document, where applicable.

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Appendix E: Database Design Document (DBDD) Sample Outline

This DBDD document outline contains Table of Content order, descriptions, and preparation instructions. A corresponding WP 6.1 template, **diidbdd.wpt**, is available from DII COE CM for document developers to use.

1. Scope

1.1 Identification

This paragraph shall contain a full identification of the system and software. It must provide the identifying number(s), title(s), abbreviation(s), version number(s), the release number(s), and the associated COE version number(s), as applicable. Identification must include the operating system platform(s) to which this document applies.

1.2 Database Overview

Briefly state the general nature and purpose of the database. Except for the initial release of this document, provide a summary of enhancements or improvements associated with the database covered by this document. Provide references to any relevant documentation.

2. Referenced Documents

Provide a list of documents referenced in this document. List each document by document number, title, version/revision, and date. Identify the source for all documents not available through the Government.

3. Database Behavioral Design

Describe the database's behavioral design. That is, how it will behave from a user's point of view in meeting its requirements (ignoring internal implementation). Identify design decisions that depend upon system states or modes. If the Software Product Specification (SPS) contains this information, information may be referenced. If some or all of the design decisions are described in custom or commercial documentation, information may be referenced (by document title, number, version/revision, and date) rather than repeated. Present or reference any conventions needed to understand the design.

For example, describe:

a. design decisions regarding queries, displays, reports, messages, and how data files will appear to the user
b. database behavior in response to each input or query
c. performance characteristics
d. selected equations/algorithms/rules and handling of unallowed inputs.

4. Database Design Details

Provide the detailed design of the database in this section. The number of levels of design and the names of those levels are based on the design methodology used (such as conceptual, internal, logical, physical, etc.). Indicate any dependency on system states or modes. Include or reference any design conventions needed.

4.1 (Name of Database Design Level)

Identify the database design level and describe the data elements and data element assemblies of the database in the terminology of the selected design method. Include the following:

a. characteristics of individual data elements, such as:

1. names/identifiers
2. data type
3. size and format
4. units of measurement
5. range of values
6. number of significant digits and accuracy
7. constraints and business rules
8. sources and recipients

b. characteristics of data element assemblies (records, messages, files, arrays, displays, reports, etc.), such as:

1. names/identifiers
2. data elements and their structure
3. medium and structure of data elements/assemblies on the medium
4. characteristics of displays and other outputs
5. relationship among assemblies
6. constraints and business rules
7. sources and recipients.

5. Database Software Units

(Detailed Design of Software Units Used for Database Access or Manipulation)

Describe in the following paragraphs each software unit used for database access or manipulation, including database applications, database tools, and scripts. If all or part of this information is provided elsewhere (e.g., a user manual for a commercial DBMS), information may be referenced rather than repeated. If any of the design depends upon system states or modes, indicate dependency. Reference any design information needed from prior paragraphs. Present or reference any design conventions needed to understand the design.

5.1 (Name Software Unit)

Identify and describe the software unit. Include the following, as applicable:

a. design features

b. constraints and limitations

c. programming language

d. list of procedural commands (such as, defining forms and reports, DBMS queries, input to GUI builder for automated code generation, commands to the operating system, or shell scripts) and a reference to documents that explain them

e. description of data the software receives or outputs, described separately from data local to the software, and other data elements and data assemblies, as applicable, including:

1. identification of the interface and interfacing entity(ies)
2. type of interface
3. characteristics of data elements/data assemblies associated with the interfacing entity(ies)
4. characteristics of communication methods and protocols
5. physical characteristics of interface

f. logic to be used by the software, such as:

1. conditions for initialization of software
2. conditions for passing control to another software unit
3. response and response time(s)
4. sequence operation and sequence control
5. exception and error handling.

6. Requirements Traceability

Provide traceability from each database or software unit to the system or software requirements it addresses. Provide traceability for each system or software requirement to the database or software unit that addresses it.

7. Notes

Provide general information to assist in the understanding of this document. May include a list of acronyms and abbreviations, and a list of terms and definitions.

A. Appendices

Appendices may be used to provide additional information published separately for convenience in document maintenance. The appendices shall be referenced in the main body of the document, where applicable.

Appendix F: System Administrator's Manual (SAM) Sample Outline

This SAM document outline contains Table of Content order, descriptions, and preparation instructions. A corresponding WP 6.1 template, **diisam.wpt**, is available from DII COE CM for document developers to use.

1. Scope

1.1 Identification

This paragraph shall contain a full identification of the system and software. It must provide the identifying number(s), title(s), abbreviation(s), version number(s), the release number(s), and the associated COE version number(s), as applicable. Identification must include the operating system platform(s) to which this document applies.

1.2 System Overview

This paragraph shall provide a brief description of the general nature, purpose, and function of the system and software.

2. Referenced Documents

Provide a list of documents referenced in this document. List each document by document number, title, version/revision, and date. Identify the source for all documents not available through the Government.

3. Operating Guidelines

Provide a list of documents available to support the system or software, including commercial guides and manuals. List each document by document number, title, version/revision, and date. Provide or reference any additional information that would assist in the implementation, installation, and operation of the system or software, as applicable.

Specify the procedures necessary to power-off, power-on, and initialize operation of the computer system, as applicable.

4. Installation Overview

Reference the documentation (such as the IP) that contains the procedures for installing, configuring, and initializing the system or software.

5. System Administration Utilities

Describe the system administration utility(ies) or related functionality provided by the system/software. If the software directly or indirectly affects a system administration function (e.g., processes data, status, commands or displays, etc.), describe the impact to system administration functions, if any.

6. Operation/Maintenance Procedures

Provide instructions for system and/or software operation and maintenance. These may include monitoring procedures, on-line procedures, off-line procedures, and any additional procedures to be followed by the administrator.

7. Error Recovery Guidelines

Describe any information pertinent to troubleshooting problems associated with the system/software. For example, error messages generated by the software and the appropriate responses, known problems or errors, any internal diagnostics provided by the software, etc.

8. Notes

Provide general information to assist in the understanding of this document. May include a list of acronyms and abbreviations, and a list of terms and definitions.

A. Appendices

Appendices may be used to provide additional information published separately for convenience in document maintenance. The appendices shall be referenced in the main body of the document, where applicable.

Appendix G: User's Manual (UM) Sample Outline

This UM document outline contains Table of Content order, descriptions, and preparation instructions. A corresponding WP 6.1 template, **diium.wpt**, is available from DII COE CM for document developers to use.

1. Scope

1.1 Identification

This paragraph shall contain a full identification of the system and software. It must provide the identifying number(s), title(s), abbreviation(s), version number(s), the release number(s), and the associated COE version number(s), as applicable. Identification must include the operating system platform(s) to which this document applies.

1.2 System Overview

This paragraph shall provide a brief description of the general nature, purpose, and function of the system and software.

2. Referenced Documents

Provide a list of documents referenced in this document. List each document by document number, title, version/revision, and date. Identify the source for all documents not available through the Government.

3. Software Summary

3.1 Software Description

Provide a brief description of the intended uses of the software. Describe capabilities, operating improvements and benefits expected from its use.

3.2 Software Inventory

Identify all software files, including databases and data files, that must be installed for the software to operate. Include security and privacy considerations for each file. Identify software necessary to continue or resume operation in case of an emergency.

3.3 Software Environment

Identify all the hardware, software, equipment, manuals and other resources needed to install and operate the software.

3.4 Software Organization and Operation Overview

Provide a brief description of the organization and operation of the software from the operator's point of view. Include, as applicable:

a. operation and purpose for each logical components of the software

b. expected performance characteristics, such as:

1. types, volumes, rate of inputs accepted
2. types, volume, accuracy, rate of outputs produced
3. typical response time, processing time, and factors that affect each
4. limitations
5. expected error rate
6. expected reliability

c. relationship of the functions performed to interfacing entities

d. supervisory or security controls (such as passwords) that can be implemented to manage the software.

3.5 Modes of Operation

Explain the differences in what the user will be able to do with the software at times of emergency and in various states and modes of operation, if applicable.

3.6 Security and Privacy

Provide an overview of security and privacy considerations associated with the software. Include a warning regarding the making of unauthorized copies of software or documents.

3.7 Assistance and Problem Reporting

Provide the points of contact and procedures to be followed to obtain assistance and report problems.

4. Access to the Software

Provide step-by step procedures, oriented to the first time/occasional user, so that the user can reliably access the software. Include safety precautions, marked by WARNING or CAUTION.

4.1 Software Setup

Describe procedures users must perform to install, deinstall, configure, and access the software on the equipment in this section.

4.1.1 Familiarization

Provide the following for first time users, or include references to the documentation that contains:

a. procedures for powering on, powering off, and adjusting needed equipment
b. characteristics of the display screen(s)
c. how to identify and use the cursor
d. keyboard layout and use

4.1.2 Access Control

Provide an overview of user security features, including:

a. how and from whom to obtain a password
b. how to add, delete, or change passwords under user control
c. security and privacy concerns pertaining to the marking and storage of media a user may generate.

4.1.3 Installation and Configuration

Reference the IP document that contains the procedures a user must perform to install and configure the software. Include or reference any additional information needed by users.

4.2 Initiating a Session

Provide step-by-step procedures for beginning work, including any options available. Include a problem determination checklist in case difficulties are encountered.

4.3 Stopping and Suspending Work

Describe how the user can cease or interrupt use of the software and how to determine whether normal termination or cessation has occurred.

5. (Name of Software) Processing Guide

This section (or sections, as needed) shall describe the functionality provided by and specify procedures for using the software. The document organization will depend on the characteristics of the software being documented. For example, Section 5 may be a guide to menus and Section 6 a guide to functions. Whatever the method of organization, the format for presenting information must have a consistent style.

5.1 Capabilities

Briefly describe the interrelationships of the transactions, menus, functions, or other processes in order to provide an overview of the use of the software.

5.2 Conventions

Describe conventions used by the software, such as display colors, audible alarms, abbreviations, and naming conventions.

5.3 Processing Procedures

This paragraph shall explain the organization of subsequent paragraphs (e.g., by function, by menu, by screen). Describe the order in which the process must be performed by the user, if applicable.

5.3.1 (Name of Process)

Identify the function, menu, transaction, or other process being described. Give options and examples, as applicable, of menus, icons, data entry forms, user inputs and outputs, alarms and messages, diagnostics, on-line help or tutorial capabilities, and any other conditions that may affect the software's interface with the user.

5.4 Related Processing

Identify and describe any related batch, offline, or background processing performed by the software that is not invoked directly by the user and is not described in paragraph 5.3. Specify any user responsibilities to support this processing.

5.5 Data Backup

Provide procedures for creating and retaining backup data.

5.6 Error Recovery

This paragraph details procedures for restart or recovery from errors or malfunctions occurring during processing and for ensuring continuity of operations during emergencies.

5.7 Messages

List, or refer to an appendix that contains, all error messages, diagnostic messages and information messages that can occur. Identify and describe the meaning of each message and the action that should be taken.

6. Notes

Provide general information to assist in the understanding of this document. May include a list of acronyms and abbreviations, and a list of terms and definitions.

A. Appendices

Appendices may be used to provide additional information published separately for convenience in document maintenance. The appendices shall be referenced in the main body of the document, where applicable.

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Appendix H: Programmers Manual (PM) Sample Outline

This PM document outline contains Table of Content order, descriptions, and preparation instructions. A corresponding WP 6.1 template, **diipm.wpt**, is available from DII COE CM for document developers to use.

1. Scope

1.1 Identification

This paragraph shall contain a full identification of the system and software. It must provide the identifying number(s), title(s), abbreviation(s), version number(s), the release number(s), and the associated COE version number(s), as applicable. Identification must include the operating system platform(s) to which this document applies.

1.2 System Overview

This paragraph shall provide a brief description of the general nature, purpose, and function of the system and software.

2. Referenced Documents

Provide a list of documents referenced in this document. List each document by document number, title, version/revision, and date. Identify the source for all documents not available through the Government.

3. Segment Overview

Provide an overview of the segment (application) development environment. Include descriptions of application development concepts, concerns, and procedures. Describe other attributes related to the subject software or COE environment a developer may need to know. Provide references to other sources of software/segment information, such as the Software Version Description, API Reference Manual, and any available program/programming related commercial documentation.

4. Segment Development

Provide details as needed to assist application developers in:

- Designing Applications
- Building Applications
- Running Applications

5. Customizing Segments

Provide information , as applicable, to assist developers in customizing applications. Include procedures for adding menu items and icons, displaying messages, reserving sockets, etc.

Alternately, this information may be provided in Section 4 (Segment Development). This and subsequent section(s) may be used to provide additional information, as required.

6. Notes

Provide general information to assist in the understanding of this document. May include a list of acronyms and abbreviations, and a list of terms and definitions.

A. Appendices

Appendices may be used to provide additional information published separately for convenience in document maintenance. The appendices shall be referenced in the main body of the document, where applicable.

Appendix I: Application Program Interface (API) Reference Manual (APIRM) Sample Outline

This APIRM document outline contains Table of Content order, descriptions, and preparation instructions. A corresponding WP 6.1 template, **diiapirm.wpt**, is available from DII COE CM for document developers to use.

1. Scope

1.1 Identification

This paragraph shall contain a full identification of the system and software. It must provide the identifying number(s), title(s), abbreviation(s), version number(s), the release number(s), and the associated COE version number(s), as applicable. Identification must include the operating system platform(s) to which this document applies.

1.2 System Overview

This paragraph shall provide a brief description of the general nature, purpose, and function of the system and software.

2. Referenced Documents

Provide a list of documents referenced in this document. List each document by document number, title, version/revision, and date. Identify the source for all documents not available through the Government.

3. API Overview

Provide an overview of the public or COE approved APIs included in the subject software/segment. List the APIs covered in this document and include a brief description of the general functionality performed, as applicable. Provide references to additional sources of information about the APIs described in this document.

4. (API General Function) APIs

This and subsequent sections may be organized by functionality or as required to present the API details. For example, section 4 may be printer APIs and section 5 may be message processing APIs. Provide subsections as needed to describe each API in detail.

4.1 (Name of API)

Describe each API and include details concerning when and how a programmer may use the subject API. Details may be organized in any consistent manner best suited to presenting the information.

Provide the following details for each API, as applicable:

- Function Name - brief description of the function
- Synopsis - calling syntax, including arguments and the return type
- Parameters - describe each parameter used by the function
- Description - describe what the function does, including events and impacts
- Returns - describe what the function returns
- Notes - additional information about the function
- Example - how to use the function

5. Notes

Provide general information to assist in the understanding of this document. May include a list of acronyms and abbreviations, and a list of terms and definitions.

A. Appendices

Appendices may be used to provide additional information published separately for convenience in document maintenance. The appendices shall be referenced in the main body of the document, where applicable.

Appendix J: Software Test Plan (STP) Sample Outline

This STP document outline contains Table of Content order, descriptions, and preparation instructions. A corresponding WP 6.1 template, **diistp.wpt**, is available from DII COE CM for document developers to use.

1. Scope

1.1 Identification

This paragraph shall contain a full identification of the system and the software. It must provide the name(s), title(s), abbreviation(s), version number(s), and the release number(s). Identification must include the operating system platform(s) to which this document applies.

1.2 System Overview

This paragraph shall provide a brief description of the general nature, purpose, and function of the system and software.

2. Referenced Documents

Provide a list of documents referenced in this document. List each document by document number, title, version/revision, and date. Identify the source for all documents not available through the Government.

3. Software Test Environment

Identify and describe the software test environment and test(s) to be performed at each intended test site. For each test site, provide the following information:

3.1 (Name of the Test Site)

Describe the items listed below necessary to perform the planned testing activities at the site. Provide the purpose and use of each item. Identify by name, number, and version, as applicable, all software and hardware items. Identify those items expected to be supplied by the site and any classification, security, privacy, or licensing issues associated with each applicable item, including:

1. **Software Items.** Software items needed to perform the testing (e.g., operating systems, processors, compilers, other applications, databases, data files, test software, etc.).

2. **Hardware and Firmware Items.** Hardware and firmware items needed to perform the testing (e.g., computer equipment, interfacing equipment, test equipment, etc.).

3. **Other Materials.** Other materials needed to perform the testing (such as manuals and listings).

4. **Installation, Testing and Control.** Plans for the installation, testing and control of each element of the test environment.

5. **Participating Organizations.** Identify the organizations that will participate and their roles and responsibilities.

6. **Personnel.** Identify the number, type, and skill level of personnel needed to perform the testing.

7. **Orientation and Training.** Describe any planned orientation or training to be given.

8. **Tests to be Performed.** Identify, by referencing Section 4, each test to be performed at the site.

4. Test Identification

Identify and describe each test to which the STP applies.

4.1 General Information

Present information applicable to the overall testing to be performed. Provide the following information:

1. **General Test Conditions.** Describe conditions that apply to all or a group of tests. State the extent of testing and the rationale for the extent selected. Provide the approach for retesting or regression testing.

2. **Test Progression.** Explain the planned sequence or progression of tests, if applicable.

3. **Data Recording, Reduction, and Analysis.** Identify and describe the data recording, reduction, and analysis procedures to be used for the tests identified in this STP.

4.2 Planned Tests for (Item to be Tested)

Identify the system, subsystem, software or other item (by name, title, version number, release number) and describe the testing planned for the item in the following paragraphs.

NOTE: The "tests" in this plan are collections of test cases. There is no intent to describe each test case in this document (refer to the Software Test Description (STD) document).

4.2.1 (Name of Test)

Identify the test and provide the following information:

1. Test objectives.
2. Test level at which testing will be performed (such as system level or configured item level).
3. Test type or class of test to be performed.
4. Qualification Method(s) as specified in the requirements specification.
5. Special requirements, if any (such as extended facility support hours).
6. Type of data to be recorded.
7. Type of data recording/reduction/analysis to be employed.
8. Assumptions and constraints, such as anticipated limitations on the test due to system or test conditions.
9. Safety, security, and privacy concerns associated with the test.

5. Test Schedules

Provide or reference the schedules for conducting the tests identified in this plan. Provide:

a. a listing or chart depicting all the sites with time frames for conducting the testing

b. a schedule for each site which includes test preparation, test execution, test data collection and preparation, and the preparation, review, and approval of the Software Test Report (STR).

6. Requirements Traceability

Provide traceability from each test to the system or software requirements it addresses. Provide traceability for each system or software requirement to the test that addresses it.

7. Notes

Provide general information to assist in the understanding of this document. May include a list of acronyms and abbreviations, and a list of terms and definitions.

A. Appendices

Appendices may be used to provide additional information published separately for convenience in document maintenance. The appendices shall be referenced in the main body of the document, where applicable.

Appendix K: Software Test Description (STD) Sample Outline

This STD document outline contains Table of Content order, descriptions, and preparation instructions. A corresponding WP 6.1 template, **diistd.wpt**, is available from DII COE CM for document developers to use.

1. Scope

1.1 Identification

This paragraph shall contain a full identification of the system and the software. It must provide the name(s), title(s), abbreviation(s), version number(s), and the release number(s). Identification must include the operating system platform(s) to which this document applies.

1.2 System Overview

This paragraph shall provide a brief description of the general nature, purpose, and function of the system and software.

2. Referenced Documents

Provide a list of documents referenced in this document. List each document by document number, title, version/revision, and date. Identify the source for all documents not available through the Government.

3. Test Preparation

Provide the information identified in the following paragraphs. Include any safety precautions, identified by a WARNING or CAUTION, and security or privacy concerns.

3.1 (Name of Test) Preparation

Identify a test and provide the following information.

3.1.1 Hardware Preparation

Describe the procedures necessary to prepare the hardware for the test. May reference published operating manuals or other documentation for these procedures. Provide, as applicable:

a. specific hardware identification
b. any switch settings and cabling required to connect the hardware
c. diagram(s) to show hardware, interconnections, control and data paths
d. step-by-step instructions for placing the hardware in a state of readiness.

3.1.2 Software Preparation

Describe the procedures necessary to prepare the item(s) under test and any related software, including data, for the test. May reference published software manuals for these procedures. Provide, as applicable:

a. identify specific software to be used in the test
b. storage medium of the item(s) under test
c. storage medium of any related software
d. instructions for loading the software
e. instructions for software initialization to more than one test case.

3.1.3 Other Preparations

Describe any other required actions, preparations, or procedures.

4. Test Descriptions

Provide the information identified in the following paragraphs. Include any safety precautions, identified by a WARNING or CAUTION, and any security or privacy concerns.

4.1 (Name of Test) Description

Identify the test and provide the following information for each test case. Where information required duplicates information previously provided, that information may be referenced rather than repeated.

4.1.1 (Name of Test Case)

Identify the test case, state its purpose, and provide a brief description. Provide details in the following paragraphs.

4.1.1.1 Prerequisite Conditions

Identify conditions that must be established prior to performing the test case, such as:

a. hardware and software configurations
b. initial conditions for hardware
c. control parameters, flags, breakpoints, or initial data settings
d. other environmental conditions.

4.1.1.2 Test Inputs

Describe the test inputs necessary for the test case, such as:

a. name, purpose, and description of each test input
b. whether the test input is real or simulated
c. source for and method of selecting the test input
d. time or event sequence of the test input
e. manner in which the test input will be controlled.

4.1.1.3 Expected Test Results

Identify all expected test results for the test case.

4.1.1.4 Criteria for Evaluating Results

Identify the criteria to be used for evaluating results of the test case. Provide the following or similar types of information:

a. acceptable input and output conditions
b. acceptable output range or accuracy
c. allowable errors and severity of errors allowed
d. minimum/maximum allowable test duration (in time or events)
e. maximum number of interrupts, halts, or other system breaks
f. conditions for interpreting outputs
g. conditions for re-testing
h. allowable indications of the control, status, and results.

4.1.1.5 Test Procedure

Define the test procedure in numbered steps listed sequentially in the order in which they are to be performed. For convenience, test procedures may be included as an appendix and referenced in this paragraph. Provide the following for each test procedure, as applicable:

a. test operator action and equipment operation required
b. expected results and evaluation criteria
c. actions to follow in the event of a program stop or other error
d. procedures to be used to collect, reduce, and analyze test results.

4.1.1.6 Assumptions and Constraints

Identify any assumptions made and constraints or limitations imposed due to system or test conditions.

5. Requirements Traceability

Provide traceability from each test case to the system or software requirements it addresses. Provide traceability for each system or software requirement to the test case that addresses it.

6. Notes

Provide general information to assist in the understanding of this document. May include a list of acronyms and abbreviations, and a list of terms and definitions.

A. Appendices

Appendices may be used to provide additional information published separately for convenience in document maintenance. The appendices shall be referenced in the main body of the document, where applicable.

Appendix L: Software Test Report (STR) Sample Outline

This STR document outline contains Table of Content order, descriptions, and preparation instructions. A corresponding WP 6.1 template, **diistr.wpt**, is available from DII COE CM for document developers to use.

1. Scope

1.1 Identification

This paragraph shall contain a full identification of the system and the software. It must provide the name(s), title(s), abbreviation(s), version number(s), and the release number(s). Identification must include the operating system platform(s) to which this document applies.

1.2 System Overview

This paragraph shall provide a brief description of the general nature, purpose, and function of the system and software.

2. Referenced Documents

Provide a list of documents referenced in this document. List each document by document number, title, version/revision, and date. Identify the source for all documents not available through the Government.

3. Overview of Test Results

3.1 Assessment of Software Tested

Provide an overall assessment as demonstrated by the test results. Identify any remaining deficiencies, limitations, or constraints and include all associated problem reports and change requests. For each deficiency, limitation, or constraint, describe:

a. the impact to software and system performance, including identification of requirements not met,
b. recommended solution/approach for correcting it,
c. the impact to software and system design to correct it.

3.2 Impact of Test Environment

Assess the ways in which the test environment may differ from the operational environment and the effect of this difference on the test results.

3.3 Recommended Improvements

Provide recommendation for improvements in the design, operation, or testing of the software.

4. Test Results

Describe the detailed results for each test in the following paragraphs.

4.1 (Name of Test)

Identify a test and describe the test results in the following paragraphs.

4.1.1 Summary of Test Results

Summarize the results of the test. Provide the status of each associated test case (possibly in table format), for example "Pass, results as expected," "Failed, problems encountered," "Retest Required, deviations encountered." Reference the following paragraphs for information regarding problems encountered in testing (i.e., all results that are not a "Pass, results as expected").

4.1.2 Problems Encountered

Identify each test case in which one or more problems occurred in the following paragraphs.

4.1.2.1 (Name of Test Case)

Provide:

a. a brief description of the problem(s)
b. reference to the associated problem report(s) and/or change request(s),
c. identification of the test procedure step(s) where the problem(s) occurred
d. efforts made to correct the problem(s), including
e. test procedure or steps repeated in retesting, and
f. the number of times the test procedure(s) or step(s) were repeated and the results.

4.1.3 Test Deviations

Identify each test case in which one or more deviations occurred in the following paragraphs

4.1.3.1 (Name of Test Case)

Provide:

a. a brief description of the deviation(s)
b. rationale for the deviation(s),
c. assessment of the deviations' impact on the validity of the test.

5. Test Log

Provide a chronological record of the test events covered by this report. May be in included as an appendix and referenced in this paragraph. The test log shall include:

a. date(s), time(s), and location(s) of the test performed
b. hardware and software identification and configurations used in each test
c. date and time of each test-related activity, including the identity of individuals performing the test and the identity of witnesses, as applicable.

6. Notes

Provide general information to assist in the understanding of this document. May include a list of acronyms and abbreviations, and a list of terms and definitions.

A. Appendices

Appendices may be used to provide additional information published separately for convenience in document maintenance. The appendices shall be referenced in the main body of the document, where applicable.

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